

INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>				ATTY DOCKET NO.		APPLICATION NO.		
				018 997703		10/729,628		
				APPLICANT(S)				
				Pal et al.		GROUP ART UNIT		
				FILING DATE		3737		
				12/04/2003				
U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE, IF APPROPRIATE	
		3,619,671	11/9/1971	Shoh	310	325	12/29/1969	
		3,830,240	8/20/1974	Antonevich et al.	128	328	7/21/1972	
		3,861,391	1/21/1975	Antonevich et al.	128	328	3/20/1974	
		4,016,436	4/5/1977	Shoh	310	8.2	12/10/1975	
		4,180,074	12/25/1979	Murry et al.	128	276	3/15/1977	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE, IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
		WO 92 07687 A	5/14/1992	PCT	B24B	1/04		✓
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
		G.V. Pflitsyn et al.; "Ultrasonic Equipment for Machining Holes on Drilling Machines" 1980, Stanki I Instrument, Vol. 51, Issue 4, pp. 31-32						
		John Mortimer; "Ultrasonics Will Machine Tomorrow's Materials" 1/15/1970, The Engineer						
EXAMINER					DATE CONSIDERED			
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance; and not considered. Include copy of this form with next communication to applicant.								

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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		4,472,840	9/25/1984	Jefferies	3	1,9	9/30/1982	
		4,537,511	8/27/1985	Frei	366	127	3/28/1984	
		4,600,005	7/15/1986	Hendel	128	304	8/22/1984	
		4,657,548	4/14/1987	Nichols	623	10	5/1/1986	
		4,747,820	5/31/1988	Horulcin et al.	604	22	4/9/1986	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
			"Ultrasonic Drilling with Diamond Impregnated Probe" Ultrasonics, Volume 2, January - March 1964					
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	4,870,953	10/3/1989	DonMichael et al.	128	24	11/13/1987	
	4,881,761	11/21/1989	Hornlein et al.	285	239	5/26/1988	
	4,951,653	8/28/1990	Fry et al	128	24	3/2/1988	
	4,988,334	1/29/1991	Hornlein et al.	604	22	5/26/1988	
	5,111,822	5/12/1992	Dory	128	660.03	5/16/1989	
U.S. PATENT APPLICATION PUBLICATIONS							
EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
FOREIGN PATENT DOCUMENTS							
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,152,763	10/6/1992	Johnson	606	86	4/2/1991	
		5,230,334	7/27/1993	Klopotek	128	399	1/22/1992	
		5,240,675	8/31/1993	Wilk et al.	422	22	9/24/1992	
		5,295,484	3/22/1994	Marcus et al.	128	660.03	5/19/1992	
		5,304,115	4/19/1994	Pflueger, Russell et al.	604	22	1/11/1991	
U.S. PATENT APPLICATION PUBLICATIONS								
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,344,435	9/6/1994	Turner et al.	607	101	11/5/1990	
		5,368,037	11/29/1994	Eberle et al.	128	662.06	2/1/1993	
		5,513,662	5/7/1996	Morse et al.	128	898	1/21/1994	
		5,549,638	8/27/1996	Burdette	607	97	5/17/1994	
		5,551,448	9/3/1996	Matula et al.	128	897	7/21/1994	
U.S. PATENT APPLICATION PUBLICATIONS								
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INFORMATION DISCLOSURE CITATION <i>(Use several sheets if necessary)</i>				Docket Number (Optional) 018.997703		Application Number 10/729,628			
				Applicant(s) Pal et al.					
				Filing Date 12/4/03		Group Art Unit 3737			
U.S. PATENT DOCUMENTS									
*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE		
		5,556,379	9/17/1996	Wolfharger	604	49	2/27/1995		
		5,597,345	1/28/1997	Young	451	165	6/20/1994		
		5,601,526	2/11/1997	Chapelon et al.	601	3	12/21/1992		
		5,628,743	5/13/1994	Cimino	604	22	12/21/1994		
		5,657,760	8/19/1997	Ying et al.	128	660.03	1/11/1996		
U.S. PATENT APPLICATION PUBLICATIONS									
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	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation		
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P03/HR/V05

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Form PTO-A820
(also form PTO-1449)

SHEET 6 OF 11

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				FILING DATE 12/04/03		GROUP ART UNIT 3737		
U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,695,500	12/9/1997	Taylor et al.	606	130	4/6/1994	
		5,697,932	12/16/1997	Smith et al.	606	80	11/9/1994	
		5,711,299	1/27/1998	Manwaring et al.	128	653.1	1/26/1996	
		5,725,478	3/10/1998	Saad	600	157	3/14/1996	
		5,730,372	3/24/1998	Bradley	241	29	4/29/1996	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		5,730,719	3/24/1998	Edwards	604	22	8/28/1996
		5,779,644	7/14/1998	Eberle et al.	600	463	9/11/1996
		5,797,871	8/25/1998	Wolfenbarger, Jr.	604	49	5/7/1996
		5,810,765	9/22/1998	Oda	604	31	6/5/1995
		5,820,581	10/13/1998	Wolfenbarger, Jr.	604	49	3/21/1996
U.S. PATENT APPLICATION PUBLICATIONS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
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U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	5,871,514	2/16/1999	Wiklund et al.	607	36	8/1/1997	
	5,871,515	2/16/1999	Wiklund et al.	607	36	8/27/1998	
	5,897,578	4/27/1999	Wiklund et al.	607	36	8/27/1998	
	5,902,264	5/11/1999	Tuso et al.	604	27	4/25/1997	
	5,919,215	7/6/1999	Wiklund et al.	607	36	8/27/1998	
U.S. PATENT APPLICATION PUBLICATIONS							
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U.S. PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
		5,938,615	8/17/1999	Eberle et al.	600	463	9/23/1997	
		5,950,629	9/14/1999	Taylor et al.	128	807	4/28/1994	
		6,022,354	2/8/2000	Mercuri et al.	606	80	12/4/1998	
		6,045,555	4/4/2000	Smith et al.	606	80	12/10/1997	
		6,080,155	6/27/2000	Michelson	606	61	2/27/1995	
U.S. PATENT APPLICATION PUBLICATIONS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
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U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		6,204,592	3/20/2001	Hur	310	323.12	10/12/1999
		Re.33,590	5/21/1991	Dory	128	660.03	11/22/1998
U.S. PATENT APPLICATION PUBLICATIONS							
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A. CLASSIFICATION		
IPC 7 B23B37/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC 7 B23B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
EPO-Internal, PAJ, WPI Data		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 92 07687 A (KOPP VOLKER OSWALD ;KOPP OSWALD (DE)) 14 May 1992 (1992-05-14) page 14, paragraph 2 -page 15, paragraph 1 figure 8	1
A	G. V. PTITSYN ET AL.: "ultrasonic equipment for machining holes on drilling machines" 1980, MELTON MOWBRAY, LEICESTERSHIRE XP002207433 51 the whole document	1
A	JOHN MORTIMER: "ultrasonics will machine tomorrow's materials" 15 January 1970 (1970-01-15) XP002207434 5947 the whole document	1
-/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		<input checked="" type="checkbox"/> Patent family members are listed in annex.
* Special categories of cited documents:		
* A* document defining the general state of the art which is not considered to be of particular relevance		* 1* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
* C* earlier document but published on or after the international filing date		* X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
* I* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		* Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
* O* document referring to an oral disclosure, use, exhibition or other means		* 3* document member of the same patent family
* P* document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search		Date of mailing of the international search report
25 July 2002		12/08/2002
Name and mailing address of the ISA European Patent Office, P.O. Box 2911, 7000 Leuven, Belgium Tel. (+31 70) 340-2000, fax 31 651 0001, Fax: (+31 70) 340-3016		Authorized officer Fiorani, G

1

Form PCT/ISA/210 (second sheet) (July 2002)

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INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 02/01017

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"ultrasonic drilling with a diamond impregnated probe" January 1964 (1964-01) XP002207435 368 the whole document	1